Land Reserve Commission

Working Farms, Working Forests

2002 Audit Report

Private Land Forest Practices Regulation

East Kootenay Properties

February 2003

Prepared for

AGRICULTURAL LAND COMMISSION
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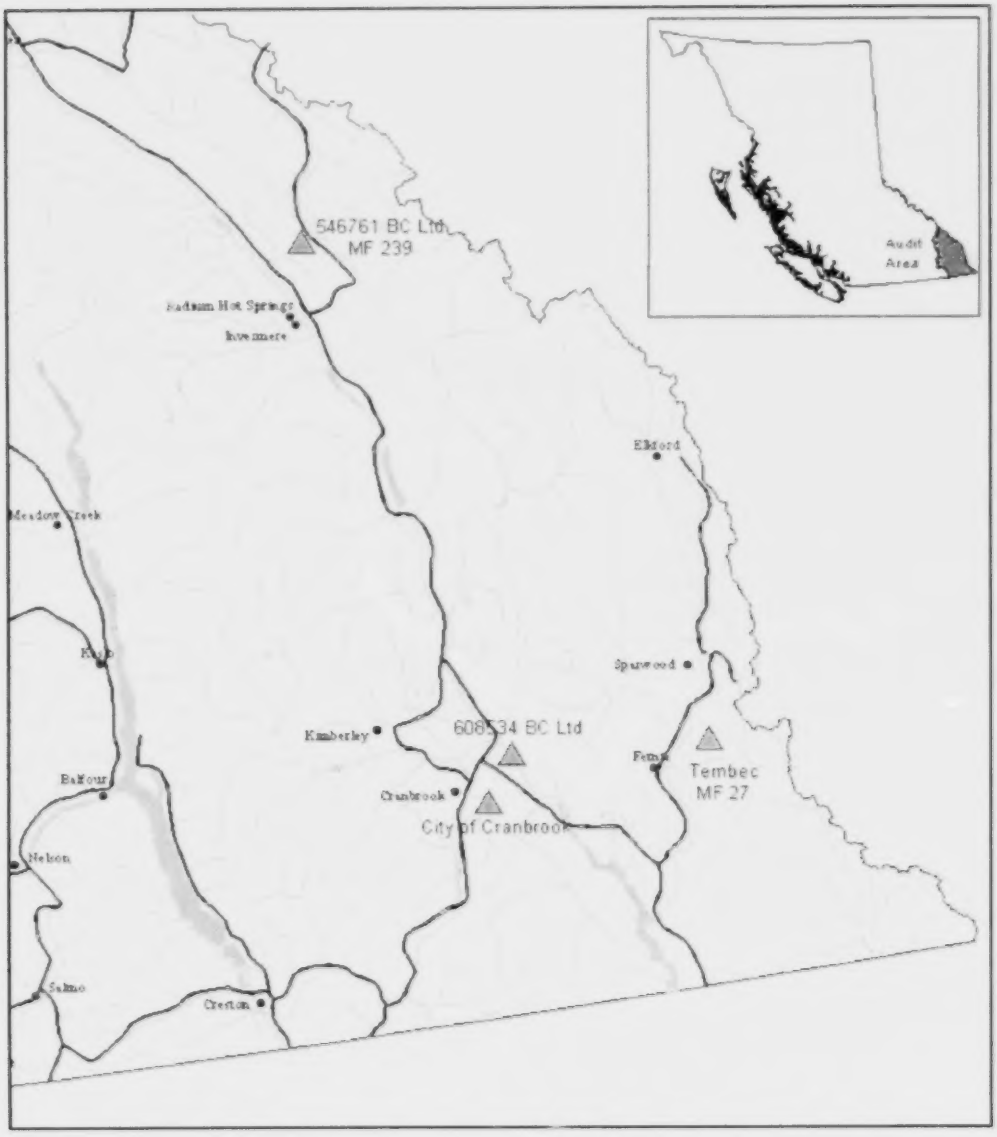
KEY MAP

East Kootenay Audit Locations



1.0 INTRODUCTION

1.1 Mandate and Legislation

The Provincial Agricultural Land Commission (the Commission), formerly the Land Reserve Commission administers the Forest Land Reserve (FLR) and the Agricultural Land Reserve (ALR). The object of the commission under the Forest Land Reserve Act is to work with owners, local governments, first nations and other communities of interest to encourage responsible forest management practices on identified land.

The FLR includes about 920,000 hectares of private forest land of which approximately 720,000 ha are classified as identified land. Identified Land is private land in FLR that is not subject to a Tree Farm Licence, a Woodlot Licence or a Community Forest Agreement under the *Forest Act*. It also includes any ALR land that is classified as managed forest for property tax assessment purposes.

The Commission is responsible for ensuring that forest management practices on identified land comply with the Private Land Forest Practices Regulation, BC Reg. 318,99 (the Regulation) which came into effect on April 1, 2000. This responsibility includes carrying out audits of forest practices on identified lands. The objective of the regulation is to protect key public environmental values. The regulation establishes forest management objectives and minimum standards of practice for the protection of water quality and fish habitat, soils, critical wildlife habitat and reforestation.

Currently the Province's private Forest Land Reserve program is in transition. Based on Core Services Review direction the FLR is to be phased out in a two-stage process and the administration of the Private Land Forest Practices standards is to be transferred to a new Provincial agency. At this time the first phase of the transition, the repeal of the land use provisions of the Act, have been implemented and transition planning for the forest practices standards is underway. The legal designation of the Reserve will be retained in the interim as it provides the basis for the private forest practices regulation and Managed Forest property tax assessment classification.

In the summer of 2002, and in accordance with section 29.97 of the Forest Land Reserve Act the commission approved an annual audit plan for identified land. This is the second consecutive year audits are being conducted by the commission under its audit programme. The 2002 audit programme is designed to build on last year's audits and to record landowner compliance with regulatory requirements over time.

The forest practices audit was undertaken during September 23 through 27, 2002 by a three person audit team. The team consisted of representatives from the Commission, the ministry of Water, Land and Air Protection and, for the first time, the Private Forest Landowners Association. Four private forest land properties in the East Kootenay region were audited. This report conveys the findings of the audit as well as a description of the objectives, scope and methodology used.

1.2 Audit Team

The audit team was chosen to ensure a wide variety of experience and expertise. For the first time, the PFLA participated as a full audit team member. This decision was made considering the changing nature of the programme and in recognizing that the PFLA works with landowners and government to provide education, training and regulatory support.

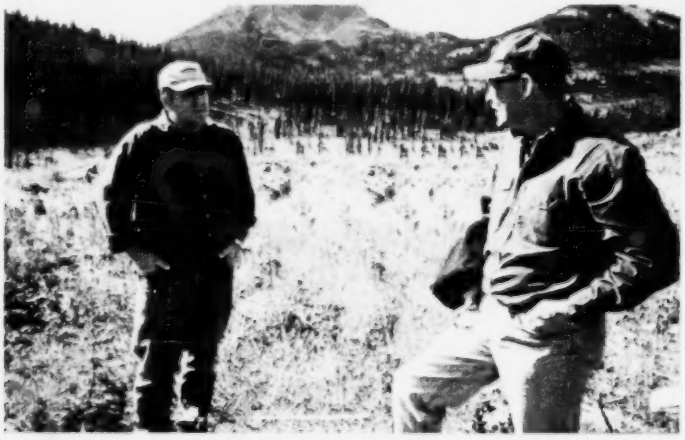
The 2002 team:

Name	Role	Affiliation
Garry Beaudry, RPF	Lead Auditor	Agricultural Land Commission

Garry Beaudry is a Registered Professional Forester and has received ISO 14001 lead auditor training. With over twenty years of experience in forest operations and auditing, he has participated in over 100 silviculture and operational forestry audits. Garry's auditing and quality assurance experience includes working with the Ministry of Forests as a silviculture audit forester at district and regional levels, a regional compliance and enforcement officer and currently as a Forest Practices Officer with the Commission. Garry is designated an "Official" under the Forest Land Reserve Act.

Rod Bealing	Auditor	Private Forest Landowners Association

Rod Bealing has trained and worked in the U.K., Europe, Scandinavia and North America, is a Forest Craftsman, holds a City & Guilds of London Institute Diploma and a B.Sc. (Forestry) Honours degree from the U.K. National School of Forestry. He has 15 years of experience working at progressive levels in a wide range of forestry-related disciplines on public and private forest lands, including logging, reforestation and landscaping contracting, development planning, engineering, and operations. His current position is Forestry Manager for the Private Forest Landowners Association, where his primary duties are landowner and government regulatory support and education and training for landowners and loggers. Rod is responsible for conducting field reviews of forest practices for PFLA members, and works closely in the field with regulatory agencies in response to public inquiries, and in investigation work. Rod brings to the audit team a broad understanding of the issues related to the protection of key public environmental values whilst conducting the business of growing and harvesting trees.



Photograph 1: Rod Bealing (L) and Garry Beaudry

Name	Role	Affiliation
Cory Legebokow	Auditor	Ministry of Water, Land & Air Protection

Cory Legebokow is a forest resources and a fish, wildlife & recreation graduate from the British Columbia Institute of Technology and has over 15 years of relevant experience. He has worked in such fields as silviculture, aquatic toxicology, industrial pollution prevention and control, environmental impact assessments, hazardous spill response, salmonid fish production, and most recently has been involved with Forest Practices Code implementation and watershed restoration under Forest Renewal BC. Cory has participated in environmental audits of the pulp and paper industry and of private forest land. In his current position as an ecosystem officer, Cory provides expertise in the biological and statutory requirements related to the protection of fish and wildlife habitat. Cory is a "designated environment official" (DEO) under the Private Land Forest Practices Regulation.

Photograph 2: auditor Cory Legebokow

2.0 OBJECTIVES

The primary objective of the 2002 audit was to assess compliance and effectiveness related to the Private land Forest Practices Regulation (BC Reg. 318/99). The audit results provide a baseline for the effectiveness of the current legislation and should be valuable for the new administering agency. The completion of the 2002 audit builds on last years audit data.

In addition, recognizing that a significant portion of identified land is independently certified, it was intended that the audit would provide insight into the potential role of third party certification in the province's private land forest practices regulatory regime.

The objectives for this audit were:

- To determine the degree to which forest practices on audited lands comply with the Forest Land Reserve Act and BC Reg. 318/99.
- To determine the effectiveness, or the extent to which the objectives described in the Schedule A Forest Management Objectives of BC Reg. 318/99 have been achieved
- To assess opportunities for improving the audit process.

Photograph 3: Kindersley Creek Valley – 546761 BC Ltd. property

3.0 SCOPE

The audit scope covers all sections of BC Reg. 318/99 and all activities completed between April 1, 2000 and December 31, 2001. The audit scope included the management requirements on identified land that relate to soil conservation, fish habitat, water supply areas, critical wildlife habitat and reforestation. The scope also addressed the owners' management activities of timber harvesting, road construction, maintenance, deactivation, reforestation and regeneration of areas harvested or destroyed. As the regulation took effect April 1, 2000, activities other than reforestation/regeneration that occurred prior to April 1 could not be reviewed from a compliance perspective. Two years of activities are included in order to maximize the potential audit sample population and because as it can take several seasons before the potential impacts of harvesting and road building become apparent.

To add efficiency, the audit was also used as an opportunity to verify landowner reforestation declarations where these have been received from the landowner as part of annual activity declarations.

Photograph 4: Re-engineered section of Baker Creek near Cranbrook

4.0 AUDIT PLAN SUMMARY

(for full details see East Kootenay Audit plan)

4.1 Selection of Landowners

Audit sample was selected based on a stratified matrix designed to ensure that different geographical areas are represented, areas with a minimum harvest threshold are audited and to screen for properties that may be of higher risk. Risk criteria for this audit were developed based on discussions with Commission forest practices officers, Water, Land and Air Protection (WLAP) staff, Fisheries and Oceans Canada (FOC) and the Private Forest Landowners Association (PFLA).

A minimum harvest threshold was established as a selection criterion. This was intended to lead to a realistic, representative audit sample, and increase the likelihood that higher levels of forest management activity would receive greater audit scrutiny. This year the minimum harvest threshold was 1000 m^3 of timber, or 5000 Christmas trees.

Further selection was made according to 2 additional criteria:

1. Those landowners who failed to report their annual activities and,
2. Those landowners who had conducted management activities adjacent to streams.

Landowners who failed to submit annual declarations as required by regulation even though they have harvested or built roads on their properties present an unknown risk. To facilitate identification of those owners who have not reported, a request was made to the BC Forest Service for a summary of scale returns for private land timber marks. This data was used to identify those owners who had failed to report.

Harvesting activities near streams were identified as a high risk factor based on the fact that most of the provisions in the regulation pertain to activities around water and all of the regulatory determinations made to date have involved streams in one manner or another.

Following further review of potential auditees against the criteria established above, the top 4 properties were selected. These properties form the sample population:

Table 1: Audit Sample Population

Landowner	Volume (2001)	Volume (2000)	Mark	Annual declaration	Harvest near streams
City of Cranbrook	2,925.5 m^3	0 m^3	NBNCK	No	Yes
608534 B.C. Ltd.	41,789 m^3	49,290 m^3	EBSDU	No	Yes
Tembec MF 27	+120,000 m^3	+160,000 m^3	various	Yes	Yes
546761 B.C. Ltd. MF 239	20,087 pieces	27,636 pieces	NBJBK	Yes	No

4.2 Audit Sample Selection

Individual sample sites were selected based on risk factors, with the main focus being on activities conducted adjacent to streams and/or water supply areas. The selection of sample sites was confirmed prior to the opening meeting.

The number of samples by activity was:

- 8 harvest units (single tree selection, clear-cut, clear-cut with reserves, and selective cutting), (this comprised 5 openings belonging to 1 owner, one opening belonging to a second owner and the other two owners had selectively harvested within their entire landbase.),
- 1.6 km of new road construction (primarily branch and on-block roads),
- 60.6 km of road maintenance (pre-existing and new roads), and
- 6 blocks partially restocked , or declared restocked in the landowner's annual declarations

Table 2: Selected Audit Sample

Activity	City of Cranbrook	608534 B.C. Ltd.	Tembec MF 27	546761 B.C. Ltd. MF 239
Harvesting	Block 3-3.2ha.	Entire lot	230-066-49ha. 230-312-22.5ha. 500-013-74.2ha. 230-220-2.5 ha. 230-221-10.9 ha.	Random patches
Road Construction	n/a	Approx 0.4 km near power line	Approx 1.2 km near Michel Cr.	none
Road Maintenance	n/a	Random – approx 25 km	Random – approx 28 km	Random – approx 7.6 km
Restocking	n/a	n/a	230-220-2.5ha. 230-221-10.9ha. 500-013-29.3ha	Various patches
Regeneration	n/a	n/a	271-017-7.4ha. 268-013-10.8ha.	Various patches

* The selection of maintained road sections was determined at the opening meeting.

4.3 Audit Protocol and Process

Informal opening and exit meetings were held with each owner. Exit meetings were mainly held on site upon completion of the field assessment phase. At the exit meetings the auditors provided an overview of their findings and a preliminary opinion on performance relative to the audit objectives. During the audit owners/owner representatives were interviewed on issues related to managing identified lands

Audit observations and collection of facts were made through a combination of interviews and field review. Working papers were completed for each audit sample. These consisted of interview notes, photographs and summary notes. The owner representatives accompanied the audit team during the field assessment of each property.

Photograph 5: On site discussions with Tembec staff

5.0 DESCRIPTION OF PROPERTIES AUDITED

5.1 Tembec

Tembec owns or manages over 100,000 hectares of managed forest in the East Kootenays. The majority of these lands are located in the Elk Valley, north of Fernie. The lands reviewed were mainly in the Montane Spruce (MS) biogeoclimatic zone. This zone occupies the middle elevations of the southern interior plateau and the Rocky Mountain trench. This is a small, narrow zone that separates the Engelmann spruce/subalpine fir zone from the Douglas-fir zone below. Precipitation is relatively low. It varies between 300 and 900 mm a year, much of it in the form of snow. The snowpack averages between 60 and 100 cm. May and June are often the wettest months of the growing season; however, summers tend to be dry, and lack of moisture in the growing season can be a problem in some areas. The extended period of drought in summer often leads to large, stand-destroying fires and causes regeneration problems. One block was located in the Engelmann spruce-supalpine fir zone. This zone is higher in elevation, has a shorter growing season and is colder that the Montane Spruce zone. In Southeast British Columbia it occurs at elevations of 1500 to 2300 m and annual precipitation ranges between only 400-500 mm in the dry portions of the zone to 2200 mm in the wetter portions. Most (50%-70%) of the precipitation falls as snow and maximum snowpack ranges from about 1 to nearly 4 metres deep. Soils are commonly frozen in winter, especially in areas with relatively light snowfall where freezing occurs before there is significant snow cover.

Photograph 6: Rehabilitated skid trails on Tembec property

Sample sites varied widely from valley bottom to midslope and upperslope blocks. Topography varied from gently rolling to moderately steep and complexly gullied. Slopes reviewed were considered stable, with minimal natural or man-made slide history observed. Soils were fine textured and somewhat calcareous throughout the audit area. Organic soil horizons are generally thin. The block in the ESSF had somewhat thicker organic horizons.

Although high value fish streams flow through MF 27, most of the streams found in the cutblocks harvested during the review period were smaller and non-fish bearing. Tembec has done some fish stream inventories both in conjunction with their crown land tenures and separately for their managed forests. Smaller and ephemeral streams are classified mainly using gradient as the primary determinant. There were no cutblocks located within community watersheds. Therefore, the main water quality issue is for fish habitat.

A list of identified wildlife has not been published by the Ministry of Water, Land and Air Protection for this region and therefore no Critical Wildlife Habitat has been established. Therefore, Critical Wildlife Habitat for any property cannot be commented on.

However, the Elk Valley is prime winter range for many ungulate species, especially elk, moose and deer. In addition, there is a wide diversity of other species that rely on the habitat. Many species of wildlife and signs of animals and birds were observed throughout the audit.

Tembec's forest management strategy is a holistic one, which attempts to take all values into account. Block planning is preceded by higher level planning to ensure such features as wildlife movement corridors, viewscape, overall road management system and other such landscape considerations are taken into account. This long range planning is facilitated by the Elk Valley Integrated Task Force. This is a group of people and organizations interested in the impacts of forestry development in the Elk Valley. Under a Tembec chair, issues are brought up and discussed at this forum.

The final stage prior to harvesting/road building is an individual block prescription that incorporates all values to the greatest extent possible. Tembec is an ISO 14001 registered company, and as such has an environmental management system. Parts of this system include a road management system (RMS) and a forest management system (FMS). Systems such as these help Tembec track specific obligations such as reforestation and ongoing obligations such as road maintenance and identify areas of highest risk.

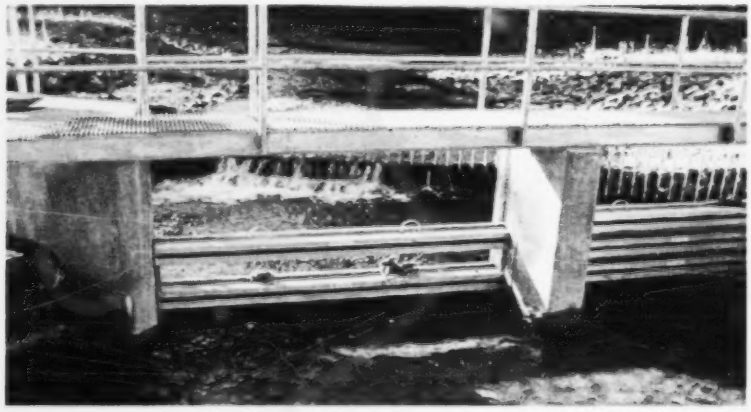
5.2 City of Cranbrook

City of Cranbrook owns over 650 hectares of identified land in the Forest Land Reserve in the East Kootenays. The land is in one parcel and located a few kilometres South-East of Cranbrook. The lands reviewed were all in the Interior Douglas-fir biogeoclimatic zone. This property is at a generally low elevation. Douglas-fir is the dominant tree. Pinegrass and feathermoss dominate the understory with soopolallie and kinnikinnick as common shrubs. The IDF is important summer livestock range as well as mule deer and elk habitat. For the zone in general, frequent fires have resulted in even-aged lodgepole pine stands at higher elevations while park-like stands of Douglas-fir and ponderosa pine are common at low elevations.

This particular piece of property consists of a flat valley bottom with steeper, more complex side drainages adjoining. There is a wide variety of tree species on the site, including; Douglas-fir, lodgepole pine, ponderosa pine, western larch, white spruce and aspen. Soils are very fine textured and easily erodable with thin organic layers.

Within the City of Cranbrook property there is a Licenced Domestic Water Supply Area that provides the city's drinking water. The property was purchased by the City of Cranbrook so that they had more control over land use within the private land portion of their watershed. The city uses water from Joseph and Gold Creeks as part of their water supply. These streams are both fish bearing and within a community water supply area. The smaller Baker Creek flows beside the main haul road and although part of the watershed, it is not used for water supply purposes. Baker Creek has been deliberately isolated from city's water intake by an engineering works, to reduce the risk of contamination, and is consequently of low risk to drinking water quality. Baker creek meets the definition of a fish bearing stream, but has not been sampled for fish presence.

The City generally maintains the forests in a mature state to gain the largest benefits for the watershed. Potential forest health problems within its FLR lands are monitored by City staff, along with neighbours and forest consultants. Limited small scale group and selective harvesting of Pine has been conducted on the City's non-FLR lands by the licensee of adjacent crown Forest Licence lands to manage the spread of Mountain Pine Beetle. In addition, there has been some recent harvesting to clear a right-of-way for a new water pipeline.



Photograph 7: Cranbrook water control structure on Baker Creek and Joseph Creek

5.3 - 608534 BC Ltd

608534 BC Ltd owns over 2,800 hectares of identified land in the Forest Land Reserve in the East Kootenays. The land is one large parcel, East of Cranbrook. The lands reviewed were all in the Interior Douglas-fir biogeoclimatic zone as described for the City of Cranbrook. The IDF is important summer livestock range as well as mule deer and elk habitat. The owner does allow cattle grazing on the property. This particular piece of property is on flat to rolling terrain with a limited portion of steeper and more complex terrain at its north end. There is a wide variety of tree species on the site, including; Douglas-fir, lodgepole pine, ponderosa pine, western larch, white spruce and aspen.

The harvested areas were located throughout the property. Generally the property is mainly a gently rolling plateau, although a small portion of the area at the North end is steeper and the topography more complex. Slopes reviewed were considered stable, with minimal natural or man-made slide history observed. Soils were fine-textured and calcareous throughout the audit area. Organic soil horizons are thin

Photograph 8: Cattle grazing on 608534 BC Ltd. Property

This piece of land is very valuable as elk and deer winter range. The owner has been working with officials at the Ministry of Water Land and Air Protection with the objective of improving the habitat. In addition, there is a wide diversity of other species that rely on the habitat. Many species and signs of animals and birds were observed throughout the audit.

There is only one main stream on the property. Mayook creek is a small stream that originates to the south of the property, flows through the eastern edge of the property then becomes subterranean prior to leaving the property. The stream has not been inventoried for fish, but due to the fact that it flows underground, there is little chance of it containing fish. There were no cutblocks located within community watersheds. Therefore, the main water quality issue is for fish habitat.

Prior to 608534 BC ownership, this area was used mainly for the production of Christmas trees and many young stands of Douglas-fir are present. 608534 BC has logged on this property over the past few years. In the last two years, over 100,000 cubic metres of wood has been harvested from the property.

5.4 - 546761 BC Ltd

546761 BC Ltd owns over 2,100 hectares of managed forest land in the Forest Land Reserve in the East Kootenays. The land is in several large parcels located North of Radium. The lands reviewed were all in the Interior Douglas-fir biogeoclimatic zone as described for the City of Cranbrook. There is a wide variety of tree species on the site, including; Douglas-fir, lodgepole pine, ponderosa pine, western larch, white spruce and aspen. Douglas-fir, the preferred species for the production of Christmas trees, makes up the majority of the stands. In addition, 546761 BC Ltd. rents their land out for cattle grazing.

This particular piece of property is flat to rolling with a limited portion of steeper and more complex terrain in the gully of Kindersley Creek. Soils are deep, fine textured and calcareous with very thin organic layers.

Photograph 9: well-vegetated operational road on the 546761 BC Ltd. property

There were no cutblocks located within community watersheds. Therefore, the main water quality issue is for fish habitat and irrigation use. McKay creek, a small non-fish stream on the MF 239 property is a valuable source of irrigation water for agriculture. Kindersley Creek is a fairly large stream that is fish bearing at least to the point of a highway culvert. A large reserve zone of about 200 metres has been left around this stream.

The managed forest is currently being used for the production of Christmas trees. Walter Verge and family have managed this property for the current and past owners for over 35 years.

6.0 FINDINGS

The audit findings are the product of an evaluation of evidence collected through interviews, field measurements, document reviews and field inspections assessed against the requirements of the *Act* and *Regulation*.

The reader is reminded that audit findings were derived from a sample of the activities on the four properties audited. Accordingly they reflect the auditors' assessment and are not necessarily representative of practices on other private Managed Forestlands in the ALR or the FLR in the East Kootenay region. The findings presented are for all four properties except where there are exceptions noted. The findings have been divided into compliance findings and effectiveness findings as described below:

Compliance findings: Are findings that assess whether specific activities or forest practices comply with the applicable *Regulation* or *Act* relating to those activities. The intent is to provide assurance that ***standards*** for the protection of public resource values on private forestland are being met.

Effectiveness findings: An effectiveness finding assesses the ***effectiveness*** of the *Regulation* in protecting the public resource values as defined by the Schedule A - Forest Management Objectives. These objectives describe the end results expected for the key public values the regulation was designed to protect. The four key values are: Soil conservation, water quality and fish habitat, critical wildlife habitat and reforestation (managed forest class only).

The objectives define the results, not the practices that are needed to meet these results. During an audit, the auditors see what practices the land owners have employed to meet those objectives. Therefore, effectiveness is often linked to the practices employed to ensure the objectives were met. The auditors have tried to describe where the effectiveness goals have been met and what practices were employed to reach these goals.

6.1 Water Quality and Fish Habitat

Compliance

The audit found that forest management activities are being conducted in compliance with the regulation. The relative lack of streams and low rainfall throughout the audit area produces a low to moderate risk for erosion of soils into streams. The main potential for point sediment source was at stream crossings and sedimentation associated with the management of road surface water.

Erosion of soils appeared to have been minimized during construction and maintenance of roads, and other forest management activities, including timber harvesting. In the situations where retention of streamside understory and non-merchantable trees was required, the auditors found that the variety of practices employed to protect the stream had complied with the requirements of the regulation. Practices observed ranged from no harvesting within or disturbance to the riparian zone, and the retention of a solid buffer of merchantable trees, to the careful removal of merchantable trees conducted during winter freeze-up on a protective snowpack. For all the forest management practices reviewed, the integrity of streambeds and stream banks had been protected, and understory vegetation and non-merchantable trees had been retained.

Photograph 10: Measuring stream widths – City of Cranbrook property

Stream crossings appeared to comply with the regulations. As the auditors were not able to observe the installation of culverts, this conclusion was based on the evidence visible at the time of audit. Erosion into streams appeared to have been minimized, streams were maintained in their natural courses, culverts were installed on grade with good armouring, and culvert size appeared adequate to handle the associated streamflow.

During the period of activity covered by this audit, there had been no water quality problems identified by downstream water users. The only active harvesting in a water supply area during the audit period was that of The City of Cranbrook. This was for a right-of-way for an upgraded water line and all work was conducted in compliance with the regulations.

There was one area of concern in regards to erosion at a crossing of Mayook Creek on the 608534 BC Ltd property. A relatively minor amount of road surface had eroded into Mayook Creek. The erosion control measures on the stream crossing could be improved when the owner repairs this piece of road. Proper armouring of the culvert edges would help reduce potential erosion in future.

Photograph 11: Erosion at the crossing of Mayook Creek on 608534 BC Ltd property

Effectiveness

Schedule A - Forest Management Objectives:

> *The forest management objective with respect to protecting human drinking water quality and fish habitat, both during and after harvesting, is to retain sufficient streamside mature trees and understory vegetation to sustain all of the following:*
>
> *(a) a natural variation in water temperatures;*
> *(b) cover for fish;*
> *(c) a continual source of large woody debris for stream channel stability purposes;*
> *(d) a vigorous mass of roots capable of controlling stream bank erosion;*
> *(e) a filter to prevent the transport of sediment into stream channels;*
> *(f) woody debris sufficient for in-stream habitat;*
> *(g) a source of nutrients to the stream through litter fall.*

Operational activities associated with water quality and fish habitat on the four properties are uniformly consistent with the intent of the regulations and the forest management objectives. The forest practices

performed in the field achieved the desired purpose of the Regulation and Act for water quality and fish habitat. This means that operations are being conducted with minimal impact to water quality and fish habitat and are considered effective.

Harvesting and road construction did not occur adjacent to any large streams (Wider than 3.0 metres). Kindersley creek is the largest potential fish stream within the audit sample, and is known by the owner to contain fish downstream from public highway crossing that forms the south boundary of the identified land. Despite concern that the culvert acts as a barrier to fish moving upstream, the owner has treated the stream upstream from the culvert as fish bearing, established a riparian zone and retained trees well in excess of regulatory requirements for fish streams.

Road maintenance and deactivation work in the sample sites reviewed was well done and is providing a stable road network. Culvert inlets and outflows are armoured and ditches are being kept clear where required. Exposed cutbanks and fill slopes have, for the most part, been seeded with grass usually within one year of construction. When roads are not in active use, waterbars are installed to control water runoff. The approach of the individual landowners, coupled with the relatively low inherent risk of the area, have meant that there is a low risk of siltation or other water quality issues within the areas sampled.

Photograph 12: Well-vegetated road and right-of-way – Tembec property

6.2 Soil conservation

Compliance

The audit found that forest management activities are being conducted in compliance with the regulation. The percentage of productive forest land converted to roads and landings was consistently less than 7%. An estimate based on extrapolating data from measured road and landing widths and map measured road lengths shows the percentage of land converted to be between 3% and 5%.

In addition, timber harvesting access structures appeared to be constructed, maintained or deactivated in a manner that minimized soil erosion.

Photograph 13: measuring road running surface widths – Tembec property

Effectiveness

Schedule A Forest Management Objectives

The forest management objectives with respect to conservation of soil, for areas where harvesting has been carried out, are:

(a) to retain the organic floor to the fullest extent possible if disturbance to the organic forest floor is likely to result in erosion of mineral soil from the area, if that erosion presents a significant risk of damage to human drinking water supplies or to aquatic habitats,

(b) to restrict the amount of productive forest land that is converted to permanent roads, landings and excavated or bladed trails to the minimum necessary to safely and efficiently conduct forest practices, and

(c) to protect soil productivity on areas other than those referred to in paragraph (b).

The forest practices performed in the field achieved the desired purpose of the Regulation and Act for the conservation of soil. Practices were effective in the conservation of soil.

Harvesting operations are being undertaken using ground-based skidding or cable yarding systems or a combination of both. Site disturbance to or scarification of the forest floor is minimal. Some blocks were harvested during the winter on frozen ground, which also minimizes site disturbance. Where skid trails were used for extracting logs, they were not severely compacted, and the majority of sites reviewed had been fully rehabilitated by re-contouring and replanting with commercial species.

The harvest systems were considered appropriate for the operating conditions and level of risk to key public environmental values. Logs are decked either at the roadside or on landings. Logging sites are left in stable condition with no signs of erosion or siltation into streams at the time of the audit.

Photograph 14: Rehabilitated and planted skid trail – Tembec property

Access to harvest sites is primarily by extending or branching off established road systems. Both new roads and existing roads are well built, with narrow cleared right-of-ways (<15m) and road surfaces of a reasonable width. Use is made of rolling grades, ditching, out-sloping of road surfaces and installing cross-drain culverts to minimize surface erosion, stabilize the road prism and provide adequate drainage of roads.

In all 4 properties, road surface widths were kept to a minimum and it is the opinion of the auditors that established road systems occupy a near minimal amount of productive tree growing land necessary to safely and efficiently conduct forest management activities.

Each landowner's approach has resulted in stable, well-maintained road systems designed, constructed and maintained in a manner that minimises the risk of siltation or erosion into streams and the amount of forest land converted to non-productive area.

6.3 Critical wildlife habitat

Compliance

The application of critical wildlife habitat provisions in the regulation requires the listing of identified wildlife species pursuant to the *Forest Practices Code* and the demonstration that there is insufficient habitat on Crown forest land within an eco-region for the identified species' habitat needs. These provisions have not been implemented at present on identified land. Consequently no comment can be made on compliance.

Effectiveness

Schedule A Forest Management Objectives

> *The forest management objective with respect to critical wildlife habitat is to facilitate the long-term protection of that habitat by:*
> *(a) providing an opportunity for the Ministry of Environment, Lands and Parks to reasonably assess whether critical wildlife habitat is present on identified land, and*
> *(b) enabling agreements to be entered into to protect the habitat.*

It was evident that landowners are aware of this regulatory requirement and process to protect Critical Wildlife Habitat and are actively engaged in ongoing communication with MWLAP. It is the audit team's opinion that any progress in the development of this standard will be effectively communicated and administered.

6.4 Reforestation

Compliance

Compliance with the reforestation provisions of the Regulation is only applicable to lands classified as managed forest. Of the four identified land holdings selected for this audit, only two (Tembec and 546761 BC Ltd.) have this designation. It is not possible to comment on the actual compliance level under this legislation because all regulatory reforestation requirements regarding the minimum allowable period within which trees must be established extend beyond the timing of this audit. However, where areas of trees were declared by the landowner to have reached "restocked" or "successfully regenerated" status, this audit was able to confirm that 100 % of the areas reviewed met the requirements of the Regulation. Based on these findings it is very likely that these owners will meet the regulatory regeneration requirements within the appropriate timeframe.

Photograph 15: Planted spruce seedling – Tembec property

Effectiveness

Schedule A Forest Management Objectives

Section 4. The forest management objectives with respect to reforestation of areas where timber has been harvested or destroyed is to promptly regenerate the areas with a healthy, commercially valuable stand of trees that is unimpeded by competition from plants and shrubs.

On the two managed forests, reforestation varies from completely planting harvested areas to relying entirely on natural regeneration. On the sites where planting is the primary method of reforestation,

harvested areas are generally planted within two years of harvest completion. Seedlings planted are higher value commercial species (e.g., Western larch, Ponderosa and Lodgepole Pine, and spruce). Planting and natural regeneration has resulted in stocking levels ranging between 800 and 5,000 stems per Hectare, well in excess of the regulatory minimum of 600 stems per Hectare. Areas logged before the regulation took effect (April 1, 2000) have been regenerated with conifer species to a similar stocking level primarily by planting. This prompt reforestation is maintaining the productivity of the forest land and there is no backlog of harvested areas requiring restocking. Given the varying landowner objectives encountered on these properties, including timber production, range and wildlife habitat management, and watershed protection, the flexibility of the reforestation standards has enabled landowners to meet their own management objectives and the schedule "A" objectives in the regulation thus achieving both owner and gov't goals.

Photograph 16: Natural Douglas-fir regeneration – 546761 BC Ltd property

There was further discussion initiated from Tembec regarding the degree of latitude in tree stocking requirements needed to enable the landowner to enhance Elk winter range. Tembec plans to seek a variance that will still allow for commercial timber production and achieve the highest quality of Elk winter range possible.

It is evident from the audit that both owners have effectively been practising prompt and effective reforestation.

6.5 General Effectiveness Findings

Operational activities on the four properties are uniformly consistent with the intent of the regulations and the forest management objectives. In the auditor's view the owners of these four properties appear to have been practising responsible forest stewardship prior to the enactment of the new regulation and continue to do so. The results-oriented focus of the regulation allows flexibility in forest management practices, encourages innovation and enables timely response to problems and unforeseen issues. In general, the auditees have continued with their forest management programmes already in place for their properties without having to make major changes in their forest practices. In doing so, they have not only achieved their own objectives, but have been effective in achieving the schedule "A" objectives.

Tembec in particular attributes part of their success in being effective to the "results-based" nature of the regulation. The freedom to manage their operations, as they see fit, without requiring government approvals of higher level or operational plans is essential to this regime. This allows Tembec great flexibility to change their operation when environmental or economic condition dictate. In turn, this allows Tembec to be effective managers of the key public values this regulation is designed to protect while maximizing the economic side of their operations.

6.6 Additional Key Aspects of Forest Management

It is the auditor's finding that in addition to regulatory requirement for key public environmental values under the Regulation, the general process and approach enables auditees to provide certain additional protection and benefits to other specific resources:

General Wildlife
It was evident during the field review that the properties visited had general wildlife habitat values. Auditees indicated awareness of general wildlife and relevant additional legislation such as the Wildlife Act, and some landowners had voluntary protection of general wildlife habitat within their management objectives. The voluntary measures adopted to preserve or enhance wildlife habitat values included prescribed burning to improve Elk browse and wildlife tree retention. It was also evident during the audit that landowners cannot completely control security of, and restrict access to their lands from third parties. Resulting trespass, and the consequent risk of fire, vandalism and poaching could compromise efforts made to enhance wildlife values on the properties.

Photograph 17: Walter Verge with Christmas tree pruning machete.

Certification

Over the past decade, there has been significant adoption of certification by forest owners and operators in British Columbia. Third party certifying agencies focus on different management attributes within a range of operational or process standards in order to provide assurance of performance standards to a variety of interested parties.

Brief discussions were held on the applicability of using ISO 14001 audits to supplement or replace Land Reserve Commission (LRC) audits. It was felt that there might be some merit in incorporating results from forest certification audits provided the certification audit is independent and consistent with LRC standards. ISO 14001 audits would probably not meet these criteria, as they are more process-oriented than results-oriented. However, some of the other certification standards may meet the criteria. It is felt that this type of approach could minimize duplication of efforts, and reduce costs for the landowner while keeping the Government satisfied that key public values are being protected. The Forest Practices Board recently announced a similar test of this new approach on Pope and Talbot's TFL 23 in the West Kootenay. The results of the Forest Practices Board trial can be reviewed and perhaps used to refine the private land forest practices audit programme.

7.0 CONCLUSIONS

In the two years that the *regulation* has been in place, all four landowners have complied with the requirements on a consistent basis. No environmental concerns were detected with respect to soil conservation, requirements for fish streams and water supply areas, critical wildlife habitat or reforestation

Perhaps more importantly the regulation is effective. Forest practices are consistent with the intent of the relevant Schedule "A" forest management objectives. The key public values the regulation was designed to protect are being protected.

This audit, in addition to last year's audit, provides a reasonable survey of how riparian management is being addressed by the landowners. Both recent and historic practices indicated that water quality and fish habitat is being protected.

In addition, the regulation has been effective in requiring owners to examine their forest practices in light of the regulation and to make changes in their operations where necessary. It has meant that more attention is paid to road construction, road maintenance and water management practices to minimize the potential for erosion of sediment into streams.

The results-oriented intent of the regulation appears to be providing the desired environmental results at this time. These conclusions are based on this small sample of Forest Land Reserve properties in the East Kootenay and should be looked at like a snapshot in time. More time needs to elapse and greater area needs to be reviewed before the effectiveness of the regulation can be more fully evaluated.

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Lead Auditor

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